

**PATENT**  
**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

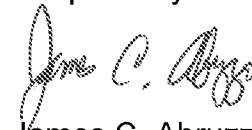
In re Application of:	:	Docket: ACM 3027 P1US
James John SCHMITT et al.	:	
	:	Group Art Unit: 1793
Serial No.: 10/582,451	:	
	:	Examiner: T. M. McGuthry Banks
Filing Date: July 19, 2006	:	
	:	Confirmation Number: 6765
For: PROCESS FOR PRODUCING IRON ORE	:	
AGGLOMERATES WITH USE OF SODIUM	:	
SILICATE CONTAINING BINDER	:	

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

**REPLY BRIEF ON APPEAL**

Appellant hereby submits this Reply Brief in accordance with 37 C.F.R. § 41.41(a)(1), in response to the Examiner's Answer mailed August 28, 2009. The honorable Board is respectfully requested to reverse the rejections for the reasons set forth herein.

Respectfully submitted,



James C. Abruzzo  
Attorney for Applicant(s)  
Reg. No. 55,890

Akzo Nobel Inc.  
Legal & IP  
120 White Plains Road, Suite 300  
Tarrytown, NY 10591  
(914) 333-7454

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**I. STATUS OF THE CLAIMS**

Claims 1-9 are currently pending. Claims 1-9 stand rejected. The rejection of claims 1-9 is appealed. No claims have been allowed.

**II. GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

The grounds of rejection to be reviewed on Appeal are summarized as follows:

- 1) Whether claims 1 and 4 are unpatentable under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,743,275 ("Cobett").
- 2) Whether claims 1, 3, 4 and 9 are unpatentable under 35 U.S.C. § 103(a) as obvious over U.S. Patent No. 6,293,994 ("Field").
- 3) Whether claims 2 and 5-8 are unpatentable under 35 U.S.C. § 103(a) as obvious over Field and further in view of U.S. Patent No. 4,728,537 ("Allen").
- 4) Whether claims 5 and 8 are unpatentable under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 3,554,792 ("Johnson").

### **III. ARGUMENTS**

In the final Office Action dated January 13, 2009, the Office rejected claims 1, 4 and 9 under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,743,275 ("Cobett"). Claims 1, 3, 4 and 9 were rejected under 35 U.S.C. § 103(a) as unpatentable over U.S. Patent No. 6,293,994 ("Field"). Claims 5 and 8 were rejected under 35 U.S.C. § 102(b) as anticipated by U.S. Patent No. 3,554,792 ("Johnson"). Claims 2 and 5-8 were rejected under 35 U.S.C. § 103(a) as unpatentable over Field and further in view of U.S. Patent No. 4,728,537 ("Allen"). In the Advisory Action dated March 24, 2009, the Office did, however, indicate that the obviousness rejection of claim 9 based on Cobett was overcome.

In response to the Examiner's Answer mailed August 28, 2009, Appellants provide the following additional distinguishing commentary, which is believed to address the Office's comments and place the present case in condition for allowance. Reversal and withdrawal of the final rejection of all of the pending claims is respectfully requested.

#### **A. Comments on Grounds of Rejection of Claims 1 and 4 under § 103(a) based on Cobett**

In the Examiner's Answer at page 5, the Office asserts that Appellants have "not showed the criticality of the more narrow range that was described in Cobett [*sic*]" with regard to a showing of unexpected results. The Office fails to indicate, however, what the "more narrow range that was described in Cobett [*sic*]" actually is. As Appellants have indicated previously, Cobett, at col. 2, lines 1-3, states that the mixture "should be at least 80%, and preferably at least 90% by weight of the ferrous metal with the balance being an alkali metal silicate, and other inorganic impurities, such as silica sand." Accordingly, Cobett discloses that the amount of silicate should be at most 20%, although a preferable range appears to be at most 10%. Regardless, where Cobett discloses a broad range, Appellants have shown that of the range of the alkali metal silicate disclosed in Cobett, amounts above that claimed by Appellants are generally undesirable and result in poorer performance than Appellants' claimed invention.

To illustrate this point, Appellants pointed to experimental data illustrated in Table 1. This data shows that for Comparative Example 2, where sodium silicate is present in an amount of 0.2%, the data revealed a significantly higher deformation and wet drop number than Examples falling within Appellants' claimed range of between 0.0001 to 0.07% by weight based on the total weight of dry iron ore agglomerate. From this data, Appellants submit that they have shown that amounts above that recited in independent claim 1, but within Cobett's disclosed range, Appellants' iron ore agglomerates produced by the process of claim 1 unexpectedly show an improvement in wet drop number and only a slight increase in deformation.

Appellants disagree that their unexpected results showing is insufficient because Appellants have allegedly not made a showing of "the criticality of the more narrow range that was described in Cobett [*sic*]," as the Office states. Appellants have indeed made a showing that within Appellants' claimed range of 0.0001 to 0.07 percent by weight (namely, 0.03, 0.05 and 0.06), Appellants' iron ore agglomerates produced by the process of claim 1 produced unexpected, improved results compared to a comparative example of 0.2 percent by weight, which falls well within Cobett's broader disclosed range (0 to 20 percent by weight, or even 0 to 10 percent by weight, as the Office alleges). Accordingly, Appellants submit that such showing is sufficient to support Appellants' position that relatively higher amounts of alkali metal silicate, such as disclosed in Cobett, are generally undesirable and result in poorer performance than the iron ore agglomerates produced by the process recited in Appellants' invention recited in claim 1. The Office's rejection, therefore, is improper and should be reversed.

Appellants submit, therefore, that independent claim 1 and claim 4, which depends from claim 1, is patentable over Cobett.

**B. Comments on Rejection of Claims 1, 3, 4 and 9 under § 103(a) based on Field**

In the Examiner's Answer at page 6, the Office asserts that Appellants have "not demonstrated the difference between 0.07%, which is the claimed upper limit, and above 0.08%, which is the lower limit in Field." The Office further asserts "[t]hat Field

exemplifies higher concentrations does not take away from the overall teaching of the range.” (Examiner’s Answer, page 6).

Field does disclose above 0.08% for alkali metal silicate content, as the Office acknowledges, as the lower limit. (See Examiner’s Answer, page 6). Accordingly, where Field exemplifies higher concentrations, such disclosure does not take away from the overall teaching of the range, but rather, Appellants submit, it defines it. Appellants submit that the weight of the Field disclosure, when read as a whole, is directed to amounts of alkali metal silicate present in amounts above 0.08%. Hence, Appellants submit that such disclosure would not have led one of ordinary skill in the art to include alkali metal silicate in an amount below 0.08%.

As noted in Appellants’ Appeal Brief, Field prefers higher amounts, such as at least 0.15%, at least 0.18% and at least 0.2%, suggesting 0.7% and 0.5% are often convenient upper limits. (Field, at col. 2, lines 18-23). Field also discloses that “[i]f inadequate alkali metal compound is used, there will be inadequate improvement in performance, for instance in pellet growth and/or in the properties of the green pellets or the fired pellets.” (Field, at col. 2, lines 24-27). As demonstrated above with respect to Cobett, Appellants have shown that 0.2%, as exemplified by Field, does not produce the unexpected results as demonstrated by Appellants’ claimed invention. Furthermore, not only does Field disclose amounts of sodium silicate well above its lowest disclosed limit, which is above Appellants’ claimed upper limit, but the trend of Field is upwards and away from the lower amounts claimed by Appellants. Accordingly, Appellants’ submit that one of ordinary skill in the art would, based on Field’s disclosure when read as a whole, have been led to use amounts of alkali metal silicate much higher than the range claimed by Appellants, and thus would have been led away from, not towards, Appellants’ invention.

The Office asserts that Appellants have not demonstrated the difference between 0.07%, which is the claimed upper limit, and above 0.08%, which is the lower limit of Field. Appellants submit, however, that based on the disclosure of Field, when read as a whole, one of ordinary skill in the art would have expected that binder systems having

0.08% or less alkali metal silicate would not have performed as well as those containing higher amounts of alkali metal silicate. For instance, as noted above, Field itself states “[i]f inadequate alkali metal compound is used, there will be inadequate improvement in performance, for instance in pellet growth and/or in the properties of the green pellets or the fired pellets.” (Field, at col. 2, lines 24-27). Where Field neither discloses nor suggests amounts of alkali metal silicate of 0.08% or less, one of ordinary skill in the art reading this statement in Field could interpret such amounts below those disclosed in Field as being inadequate. The Office’s rejection, therefore, is improper and should be reversed.

Appellants submit, therefore, that independent claim 1 and claims 3, 4 and 9, which depend from claim 1, are patentable over Field.

**C. Comments on Rejection of Claims 2 and 5-8 under § 103(a) based on Field and further in view of Allen**

In the Examiner’s Amendment at page 6, the Office asserts that “Allen is not cited to recite the efficacy of carboxymethyl cellulose as a binder, just that it can be used as such.”

The Office rejects claims 2 and 5-8 as obvious over Field and further in view of Allen. Specifically, the Office asserts that Field discloses the invention substantially as claimed, but acknowledges that Field “does not specifically disclose using carboxymethyl cellulose as in Claim 2.” (Office Action, page 3). To supply this missing feature, the Office turns to Allen for the alleged disclosure “that carboxymethyl cellulose is a type of cellulosic binder.” (Office Action, page 3).

Regarding the basis for this rejection, Appellants submit “[i]t is impermissible within the framework of section 103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art.” *In re Wesslau*, 353 F.2d 238, 241 (C.C.P.A. 1965); *see also Bausch & Lomb, Inc. v. Barnes-Hind/Hydorcurve Inc.*, 796 F.2d 443, 448-49 (Fed. Cir. 1986)(holding that the



district court, by failing to consider a prior art reference in its entirety, ignored portions of the reference that led away from obviousness.) Here, Appellants submit that because the Office relies on Allen only for its disclosure of carboxymethyl cellulose used as a binder, but otherwise ignores the numerous passages in Allen that disparage and criticize the use of carboxymethyl cellulose as a binder, the Office's obviousness rejection is improper.

Appellants submit that the Office cannot simply ignore Allen's critical statements that teach away from Appellants' invention on the one hand, and on the other hand pick and choose only that portion of the Allen disclosure it deems supports its rejection to the exclusion of the rest. Clearly, such a rejection fails to consider Allen "in its entirety, i.e. as a whole, including portions that would lead away from the claimed invention." The Office's rejection, therefore, is improper and should be reversed.

For at least the above reasons, Appellants submit that a *prima facie* case of obviousness has not been made. Therefore, claims 2 and 5-8 are patentable over Field in combination with Allen.

**D. Comments on Rejection of Claims 5 and 8 under § 102(b) based on Johnson**

In the Examiner's Amendment at page 6, the Office asserts that "[the limitation 'for producing iron ore agglomerates' is intended use" and thus concludes that such limitation does not limit the scope of the claim.

Independent claim 5 recites, in its preamble, "[a] binder system for producing iron ore agglomerates." The binder system for producing iron ore agglomerates comprises carboxymethyl cellulose and an alkali metal silicate. Appellants maintain that the preamble of claim 5 is not merely directed to an intended use, but defines a fundamental characteristic of the claimed invention, i.e. that the claimed binder system is required for producing iron ore agglomerates. This distinguishes the claimed composition from Johnson, which is not capable of producing iron ore agglomerates, as the Office alleges. As discussed in Appellants Appeal Brief, the binder disclosed in

Johnson is not disclosed or suggested as for producing iron ore agglomerates. Rather, the binder disclosed in Johnson would lead to excessive clustering and severe deformation instead of controlled growth that is needed to produce an agglomerate.

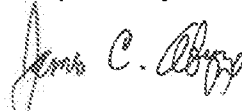
Further, Appellants submit that the language "for producing iron ore agglomerates" does relate to a particular structure for the binder system. As noted above, the binder system claimed by Appellants is a binder system having the fundamental characteristic that it is for producing iron ore agglomerates, as compared to the coating disclosed by Johnson, which is for welding electrodes. These two binder systems are distinguishable, not interchangeable, as the Office apparently alleges.

Accordingly, because independent claim 5 identifies a patentable distinction over Johnson by setting forth a fundamental characteristic of the claimed invention, i.e. the binder system is for producing iron ore agglomerates, Johnson does not anticipate claim 5. Moreover, claim 8, which depends from claim 5, is also not anticipated by Johnson for at least the same reasons that claim 5 is not anticipated by Johnson. Reversal of the rejection of claims 5 and 8 is therefore respectfully requested.

#### **IV. CONCLUSION**

For all of the above reasons, as well as all of the reasons submitted in Appellants' Appeal Brief filed June 15, 2009, Appellants submit that the currently pending rejections of claims 1-9 are improper. Accordingly, the rejection of the appealed claims of record should be reversed with instructions to allow these claims over the cited references. Such action is hereby respectfully requested.

Respectfully submitted,



James C. Abruzzo  
Attorney for Applicant(s)  
Reg. No. 55,890

Akzo Nobel Inc.  
Legal & IP  
120 White Plains Road, Suite 300  
Tarrytown, NY 10591  
(914) 333-7448